Exhibit A

STATEMENT
OF
WORK

X-43C
HYPERSONIC DEMONSTRATOR VEHICLES

DESIGN/DEVELOPMENT, TEST, ENGINEERING
AND OPERATIONS

NASA Langley Research Center
Hampton, Virginia

REVISION HISTORY

Version	Date	Sections	Description

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LIST OF APPENDICES

1 INTRODUCTION

This Statement of Work (SOW) defines the effort to be performed in support of the X-43C Hypersonic Flight Demonstration Project. The X-43C Project is being implemented by Langley Research Center (LaRC) for Next Generation Launch Technology, a NASA HQ program. LaRC will execute the X-43C Project from within the Project Implementation Office in support of LaRC's Space Access and Exploration Office. Development of the X-43C hydrocarbon-fueled/cooled propulsion system is a joint effort between NASA and the United States Air Force (USAF). Dryden Flight Research Center (DFRC) will be the responsible test organization (RTO) for the X-43C Demonstrator Vehicles (DV). Marshall Space Flight Center will manage the Booster and Launch Services procurement for the X-43C Project.

2 MISSION OBJECTIVES

The project has four objectives described below with their respective performance goals and performance indicators:

Objective 1: Demonstrate and validate flight performance of flight-weight, hydrocarbon-fueled/cooled, dual-mode scramjets accelerating from Mach 5 to Mach 7, including combustion mode transition, in steady and maneuvering flight.

The performance goal for this objective is to achieve net thrust to accelerate the vehicles from Mach 5 to Mach 7, including combustion mode transition, and return flight data to the ground. Performance indicators are delivered flight data that show scramjet performance.

Objective 2: Demonstrate and validate the flight characteristics of air breathing hypersonic vehicles in powered and un-powered flight.

The performance goal for this objective is to achieve stable flight in powered and un-powered modes and to return flight data to the ground. Performance indicators are delivered flight data that show stable flight in both modes.

Objective 3: Provide ground and flight data to validate computational methods, analytical predictions, test techniques, and propulsion operability.

The performance goal for this objective is to provide multi-discipline flight data to enable validation of design, analysis, and test methodologies. Performance indicators are delivered flight data to enable the validation activity.

Objective 4: Execute an affordable plan focused on key propulsion technology using existing designs, analysis methods, databases, and off-the-shelf hardware to the maximum practical extent.

The performance goal for this objective is to deliver project hardware and flight tests on planned schedule or earlier and at or below planned cost. Performance indicators are achieved project costs and delivery dates.

3 DESCRIPTION OF MISSION

Three flights are planned to investigate vehicle/engine performance and interaction over a realistic flight envelope. The X-43C Demonstrator Vehicle (DV) will utilize the engine concept developed under the USAF HyTECH Program.

Each flight test will demonstrate the performance of an air-breathing hypersonic DV at the specified test conditions. Flight data will be acquired to verify the preflight scramjet performance predictions: aerodynamic characteristics, stability and control parameters, and flight scaling of ground based experimental data. Each flight will explore a portion of the flight envelope for specific propulsion issues and aero-propulsive interactions. The DV's are expected to deliver about 3 to 5 minutes of powered propulsion and aerodynamic data and about 7 minutes of unpowered aerodynamic data.

The DV will be boosted using a modified Pegasus booster. The DV will then separate from the booster, achieve engine start, and accelerate from Mach 5 to Mach 7 over several minutes of powered flight. The vehicle will then descend in unpowered flight to splash down in the Pacific Ocean.

4 MISSION PHASES

The mission definitions described in this section result in a series of mission phases. These phases are listed and defined below.

4.1 Ground Test Phase

The Ground Test Phase encompasses all DV, Adapter, Booster, and Launch Vehicle (LV) ground tests required for LV integration while not mated to the Carrier Aircraft.

4.2 Pre-flight Phase

The Pre-flight Phase encompasses all testing and servicing with the LV including preparation and mating to the Carrier Aircraft (CAC) for flight.

4.3 Captive-Carry Phase

The Captive-Carry Phase begins with Carrier Aircraft (CAC)/mated-LV taxi and ends with either the LV launch from the CAC or the initiation of CAC/mated-LV return to base.

4.4 Drop /Boost Phase

The Drop/Boost Phase begins with the LV release from the CAC, including LV boost, and ends with the initiation of the DV separation sequence.

4.5 Separation Phase

The Separation Phase begins with the initiation of the DV separation sequence and ends with DV free-flight autonomous control initiation.

4.6 Coast Phase

The Coast Phase begins with DV autonomous control initiation and ends with initiation of engine start sequence.

4.7 Engine Test Phase

The Engine Test Phase begins with the initiation of the engine start sequence and ends with completion of engine-powered flight.

4.8 Descent Phase

The Descent Phase consists of controlled DV flight beginning with the completion of the Engine Test Phase and ending with water impact or DV entry into uncontrolled flight.

4.9 Terminal Phase

The Terminal phase is uncontrolled DV flight through water impact

4.10 Return to Base Phase

The Return To Base (RTB) phase begins upon the initiation of the CAC's return to a landing, either alone or mated with the LV and ends with the completion of post-flight taxi.

4.11 Post Flight Phase

The Post-flight Phase begins with the CAC parked upon completion of the post-flight taxi and ends once the CAC has been safed and the crew exited from the aircraft. If the LV is still attached to the CAC, this phase will continue until the LV has been safed and all de-servicing of the LV has been performed.

5 SCOPE

SOW specifies the performance, testing, calibration, product assurance, and support requirements for the design, development, assembly, integration, testing, operations, maintenance, and packaged research data. This procurement requires the provision of three Demonstrator Vehicles with Adapters, one Flight Clearance Engine, and associated support activities and hardware.

6 CONTRACTOR REQUIREMENTS

6.1 Management

6.1.1 The Contractor shall provide the management functions necessary to perform the contract tasks. These include the planning, organizing, staffing, directing, and controlling of all contract activities so that the requirements can be achieved for all deliverables in the most timely and cost-efficient manner.

6.1.2 The Contractor shall support Government-led Management and Technical Working Groups, as required, to address and coordinate critical interface areas such as: Cross-contract interface areas, discussion of planning documents requiring government approval, coordination of Government Configuration Control Board actions, and planning for contractor participation in Government-led integration, validation, and test. Government-led Working Groups are comprised of Government representatives and their support Contractors, members of the Contractor's team, and representatives of other Project contractors.

6.1.3 The Contractor shall accommodate participation of Government Representatives within the Contractor's technical teams for Design, Engineering, and Testing. Government participation will enable effective integration of Government furnished information and efficient development of Government insight.

6.2 Engineering/Technical

6.2.1 The Contractor shall utilize the engine concepts developed during the USAF HyTECH Program as described in Appendix 2, Propulsion Subsystem Requirements.

6.2.2 The Contractor shall utilize the Government-provided DV Outer Mold Line (OML) and engine flowpath geometry.

6.2.3 The Contractor shall provide the systems engineering and integration services and materials required for the design, analysis, fabrication, integration, verification testing, and operation of three DV's, three DV Adapters, and one ground-test Flight Clearance Engine (FCE).

6.2.4 After delivery to the RTO the Contractor shall provide engineering and technical services required for the support of DV and Adapter validation testing, DV and Adapter integration, integration to the Booster, pre-launch testing, and mission operations. These services shall include, but are not limited to, engineering support at the Contractor's facility as well as technical support at the RTO during DV and Adapter testing, pre-launch integration activity, and launch. Specific technical support services shall include, but are not limited to, any necessary DV/Adapter maintenance, repair, and technician support during DV/Adapter activity, and training of Government staff for DV and Adapter operations.

6.2.5 The Contractor shall provide engineering and technical services required for the

support of FCE in the Eight-Foot High Temperature Tunnel (8-Ft. HTT) testing. These services shall include, but are not limited to, engineering support at the Contractor's facility as well as technical support at the 8-Ft. HTT during FCE testing. Specific technical support services shall include, but are not limited to, any necessary FCE maintenance, repair, and technician support during FCE test activity and training of Government staff for FCE operations.

6.2.6 The Contractor shall provide mechanical and electrical Ground Support Equipment (GSE) for control and servicing of the DV and Adapter during ground operations and testing at DFRC. The Contractor supplied GSE shall be designed to interface with DFRC facilities and existing DFRC GSE to the maximum extent practical.

6.2.7 The Contractor shall provide all necessary means to handle, package, and transport all deliverables in accordance with the FAR 1852.211-70, Packaging, Handling, and Transportation.

7 TECHNICAL REQUIREMENTS

The following sections describe the fundamental requirements for the deliverable elements of this contract.

7.1 Demonstrator Vehicle

The DV shall demonstrate autonomous control, acceleration, and free flight of a hydrocarbon-fueled/cooled dual-mode scramjet-powered vehicle from Mach 5 to Mach 7, including combustion-mode transition, in steady and maneuvering flight. The DV shall be designed and built to successfully operate over the full range of required operations. Each DV shall contain all structures, subsystems, and equipment necessary to meet the requirements in this SOW. Detailed DV requirements, including subsystems, are set forth in Appendix 1, DV Element Requirements. Propulsion Subsystem requirements are specified in Appendix 2, Propulsion Subsystem Requirements. The DV and its subsystems must meet the requirements of Appendix 4, Environmental Requirements.

7.2 Adapter

The Adapter shall provide the interface and transition from the DV to the Booster. It consists of all support structures, attachments, separation mechanisms, and supporting subsystems. The technical requirements are specified in Appendix 3, Adapter Element Requirements. The Adapter must meet the requirements of Appendix 4, Environmental Requirements.

7.3 Ground Systems

The requirements for Contractor supplied GSE are specified in Appendix 7, Verification and Systems Integration Test Requirements.

7.4 Software Management

The requirements for Software Management are specified in Appendix 5, Software Management Requirements.

7.5 Product Assurance & Safety

The requirements for Product Assurance and Safety are specified in Appendix 6, Product Assurance Requirements.

7.6 Documentation

The deliverable documentation requirements are specified in Appendix 8, Documentation Requirements.

8 APPLICABLE DOCUMENTS

8.1 General Government Specifications and Standards

Langley Center Procedure LMS-CP-5505, Flight Project and Experiments Review Planning and Implementation
Langley Center Procedure LMS-CP-5580, Airworthiness and Safety Review Board
NPG 7120.5, NASA Program and Project Management Processes and Requirements
MIL-STD-1522A, Standard General Requirements for Safe Design and Operation of Pressurized Missile and Space Systems, 5/28/84
MIL-STD-461D, Requirements for the Control of Electromagnetic Interference Emissions and Susceptibility, 1/11/93
MIL-STD-462D, Test Method Standard for Measurement of Electromagnetic Interference Characteristics, 1/11/93
MIL-STD-810F, Environmental Test Methods and Engineering Guidelines, 7/14/89
MIL-STD-2073, Standard Practice for Military Packaging
MIL-HDBK-1811, Mass Properties Control for Space vehicles, 08/12/1998
LAPG 1710.15, Wind Tunnel Model Systems Criteria Handbook (For FCE only)
DCP-O-018, Baseline, Environmental Acceptance Testing Electronic and Electromechanical Equipment (DFRC document)
N71-17905, Final Report – Aerospace Systems Pyrotechnic Shock Data (Ground Test and Flight) – Volume VI: Pyrotechnic Shock Design Guidelines Manual (Goddard Space Flight Center document)
IRIG Standard 106-01
EWR 127-1, Eastern and Western Test Range Regulation

8.2 General Commercial Specifications and Standards

IEEE/EIA 12207.0-1996, Industry Implementation of International Standard ISO/IEC 12207-1995, Software Life Cycle Processes
IEEE/EIA 12207.1-1997, Industry Implementation of International Standard ISO/IEC 12209-1995, Software Life Cycle Processes-Life Cycle Data

8.3 General Reference Documents

The following documents will be made available after contract award:

0100-01 X-43C Project Implementation Plan
0100-02 X-43C Risk Management Plan
0100-03 X-43C Configuration Management Plan
0100-04 X-43C Data Management Plan
0100-05 X-43C Mission Assurance Plan
0100-06 X-43C Systems Engineering Management Plan
0100-07 X-43C Software Management Plan
0100-08 X-43C Safety Plan
0100-09 X-43C Integrated Master Test Plan
0100-10 X-43C Security Classification Guide
0102-02 X-43C Operational Concept Document

9 PROJECT REVIEWS

The Contractor shall conduct formal and informal reviews and meetings during all phases of the X-43C Project.

9.1 Informal Reviews

In order to provide insight into developmental progress, informal reviews shall be held as deemed necessary by the X-43C Project Manager. These reviews will require minimal advance preparation.

9.2 Quarterly Reviews

The Contractor shall support Project Quarterly Reviews held to assess technical, cost, and schedule status. These reviews shall be held in conjunction with other technical interchange meetings when possible.

9.3 Formal Reviews

9.3.1 Formal Project reviews to be conducted are shown in the following table.

DV & ADAPTER REVIEWS

Review	Level of Participation*	Timeframe (# of Months following Contract Award)
Delta Systems Requirements Review **	Present	2

Review	Level of Participation*	Timeframe (# of Months following Contract Award)
Project Design Cycle Review	Present	5
Preliminary Design Review**	Present	9
Initial Airworthiness and Flight Safety Review Board***	Support	12
Project Design Status Review	Present	16
Critical Design Review**	Present	21
1st System Acceptance Review**	Present	38
Flight Readiness Review**	Support	41
Airworthiness and Flight Safety Review Board***	Support	43
2nd Systems Acceptance Review**	Present	47
Delta Flight Readiness Review**	Support	50
Delta Airworthiness and Flight Safety Review Board***	Support	52
3rd Systems Acceptance Review**	Present	56
Delta Flight Readiness Review**	Support	59
Delta Airworthiness and Flight Safety Review Board***	Support	60

* "Present" requirement is to give a formal presentation of the status of all contract tasks and deliverables.
"Support" requirement is to participate and provide summary of DV, Adapter, and GSE status.
**These reviews shall be held in accordance with LMS-CP-5505.
***These reviews shall be held in accordance with LMS-CP-5580.

9.3.2 Formal reviews to be conducted for the FCE are shown in the following table.

FCE REVIEWS

Review	Level of Participation*	Timeframe (# of Months following Contract Award)
Preliminary Design Review	Present	6
Critical Design Review	Present	12
System Acceptance Review	Present	22
Test Readiness Review	Present	1 month prior to 8-Ft. HTT test start

10 WORK BREAKDOWN STRUCTURE FRAMEWORK

This section provides a framework for a WBS and WBS Dictionary on which the Contractor shall base their work effort.

10.1 Contract Work Breakdown Structure

10.1.1 The Contractor shall deliver a product-oriented Contract Work Breakdown Structure (CWBS) in accordance with DRD-1.

10.1.2 The CWBS, and resultant Contractor reporting system, shall have sufficient detail to allow the Government to track Contractor performance using Earned Value Management (EVM). At a minimum, the Contractor shall plan, track, and report work to the element (task) level of the CWBS and shall provide (1) explicit descriptions of the end items delivered by work element; (2) predicted and actual staffing/workload (work hours); and (3) predicted and actual full cost for each work element. EVM will be used to measure Contractor performance against the Contractor's predicted work product delivery and cost structure.

10.1.3 The lowest level of the CWBS shall correspond to the lowest level at which scheduled work, accomplished work, and actual costs can be compared, which shall be mutually agreed upon between the Contractor and the Government. The established coding shall be used to identify particular CWBS elements on all budgets, schedules, and financial reports. Elements of the Project WBS (PWBS) encompassing the scope of the contract effort are given below. The Contractor may propose changes to the PWBS to improve the tracking of the contractual effort.

10.1.4 The following illustrates the X-43C Project WBS.

WBS#	**Level**	
01	1	**Summary (X-43C Project)**
01.01	2	**Demonstrator Vehicle (DV)/Adapter**

WBS#	Level	
01.01.10	3	**DV/Adapter Contract**
01.01.10.01	4	DV Flight System
01.01.10.01.10	5	Airframe
01.01.10.01.16	5	Propulsion
01.01.10.01.11	5	Vehicle Management System (VMS)
01.01.10.01.12	5	Communications/Identification
01.01.10.01.13	5	Instrumentation
01.01.10.01.14	5	Electrical
01.01.10.01.15	5	Flight Termination Sys
01.01.10.01.17	5	Purge
01.01.10.01.18	5	Integration, Assembly, Test and Checkout
01.01.10.02	4	Adapter Flight System
01.01.10.02.07	5	Structure
01.01.10.02.08	5	Separation Mechanism
01.01.10.02.09	5	GN2 Purge
01.01.10.02.10	5	Electrical Cabling
01.01.10.02.11	5	Onboard Camera
01.01.10.02.12	5	Integration, Assembly, Test and Checkout
01.01.10.03	4	DV/Adapter Test and Evaluation
01.01.10.03.07	5	Simulation Dev
01.01.10.03.08	5	Structural Dynamic Model Dev
01.01.10.03.09	5	Aero Model Dev Support
01.01.10.03.10	5	VSD Dev Support
01.01.10.03.11	5	DV Emulator
01.01.10.03.12	5	Flight Clearance Engine (FCE)
01.01.10.04	4	Ground Support Equipment
01.01.10.04.04	5	Ground Test Equipment
01.01.10.04.05	5	Ground Handling Equipment
01.01.10.04.06	5	Ground Servicing Equipment
01.01.10.05	4	Shipping/Transportation
01.01.10.06	4	Training
01.01.10.07	4	Engineering Field Support
01.01.10.07.10	5	FCE Integration and Test
01.01.10.07.11	5	VSD Integration and Test
01.01.10.07.12	5	DV Validation Testing
01.01.10.07.13	5	Adapter Validation Testing
01.01.10.07.14	5	DV/Adapter Integration and Test
01.01.10.07.15	5	LV Integration and Test
01.01.10.07.16	5	Flight Operations
01.01.10.08	4	Project Management/Systems Engineering
01.01.10.08.05	5	Project Management
01.01.10.08.06	5	Systems Engineering
01.01.10.08.07	5	Product Assurance
01.01.10.08.08	5	Safety
01.01.21	3	***Propulsion****
01.01.21.11	4	GDE 2.0
01.01.21.09	4	MFPD

WBS#	Level	
01.01.21.10	4	Flight Clearance Engine Test
01.01.18	3	***Aero Development****
01.01.19	3	***Vehicle Systems Demonstrator (VSD) Dev****
01.02	2	**Booster/Launch Services**
01.03	2	**Flight Support Ops and Services**
01.04	2	**Project Management / Systems Engineering**

* Government task

10.2 CWBS Dictionary

The CWBS Dictionary shall define the scope of each WBS element and describe the tasks included in each element as follows:

- Work to be performed.
- Quantity of hardware and software to be developed and delivered.
- Services to be furnished.
- Other significant data that describe the non-recurring "end products" of each WBS element.
- Criteria for determining completion of the work.
- Organization responsible for the work.

11 SPECIAL REQUIREMENTS

11.1 Engineering Units

Standard English Units shall be used.

11.2 Commercial Software Design & Analysis Tools

The commercial software design and analysis tools shall be compatible with the following:

Mechanical	Pro/Engineer
Electrical	VERIBEST or OrCAD
Structural	MSC/NASTRAN
Thermal	TRASYS, TSS, SINDA, TAK III
Optical	Code V

All CAD/CAE models shall be provided in native format and a format compatible with above tools.

11.3 Management Software Tools

11.3.1 The Contractor's management software tools shall conform to the following:

Text	MS Word (Version 2000 or later)

Spreadsheet	MS Excel (Version 2000 or later)
Presentation Charts	MS PowerPoint (Version 2000 or later)
Schedule	MS Project (Version 2000 or later)
Project Reporting	Space Transportation Information Network (STIN)
Requirements	Telelogic DOORS

11.3.2 The Contractor shall report certain management information into the NASA STIN on a monthly basis. STIN is a web-based database that is text and graphics compatible with the above management software tools. Data reported into STIN shall include, but is not limited to, risk management, financial metrics, workforce metrics, technical metrics, schedule metrics, and general accomplishments. The data is generally at an overview level. STIN is intended to provide a structured repository for reporting of normally-generated management information that will be regularly reported to the Government.

11.4 Information Distribution System

11.4.1 The Contractor shall maintain a web-based, electronic database for information storage and distribution. The database shall be developed and maintained in a manner to assure configuration control for included information.

11.4.2 The Contractor database shall include design, engineering, and test documentation (test plans and reports, including vendor supplied test data and certifications). Classified information is exempt from this requirement.

11.4.3 The Contractor database shall be made available to Government personnel for viewing, retrieving, and uploading information.

12 ITAR DATA MANAGEMENT

All data used or furnished shall be managed in accordance with the International Traffic in Arms Regulations (ITAR), 22 CFR 120-130, and shall be appropriately marked prior to delivery to the Government.

All electronic ITAR data transmittals, including e-mails, and Information Distribution Systems containing ITAR data shall use a minimum 128-bit encryption methodology.

13 CONTRACTOR ON-SITE OFFICE SUPPORT

The Contractor shall provide office space at the Contractor's facilities for up to three Project visitors at one time including furniture, telephones, Internet connections, and access to copy and facsimile machines.

14 CONFLICTING REQUIREMENTS RESOLUTION

The Contractor shall notify the Contracting Officer's Technical Representative (COTR) as soon as any conflict is identified between or within the SOW, Appendices, and the Applicable Documents. The Contractor shall support the resolution of the conflict as necessary.

15 ACRONYMS

8-Ft. HTT	Eight-Foot High Temperature Tunnel
A/D	Analog-to-Digital
BER	Bit Error Rate
CAC	Carrier Aircraft
CCB	Change Configuration Board
CG	Center of Gravity
CM	Configuration Management
COTR	Contracting Officer's Technical Representative
CR	Computer Resource
CWBS	Contractor Work Breakdown Structure
dB	Decibel
DDS	Data Distribution System
DFRC	Dryden Flight Research Center
DRD	Data Requirements Description
DRL	Data Requirements List
DV	Demonstrator Vehicle
DVMS	Demonstrator Vehicle Monitoring Station
ECU	Engine Control Unit
EMC	Electromagnetic Compatible
EMI	Electromagnetic Interference
EPA	Environmental Protection Agency
ES	Engine Subsystem
EWR	Eastern & Western Range
FCE	Flight Clearance Engine
FDS	Fuel Delivery System
FEA	Finite Element Analysis
FEM	Finite Element Modeling
FIP	Fabrication Inspection Plan
FMECA	Failure Mode, Effects, and Criticality Analysis
FMU	Flight Management Unit
FOD	Foreign Object Debris
FTA	Fault Tree Analysis
FTS	Flight Termination System

GFI	Government Furnished Information
GN&C	Guidance, Navigation, and Control
GSE	Ground Support Equipment
GTE	Ground Test Equipment
HIL	Hardware-in-the-Loop
HQ	Headquarters
Hz	Hertz
ICD	Interface Control Document
IRIG	Inter-Range Instrumentation Group
ISO	International Standards Organization
Isp	Specific Impulse
ISS	Igniter Spark Subsystem
ITAR	International Traffic in Arms Regulations
ITS	Integrated Test Stand
JP-7	Jet Propellant Seven
LaRC	Langley Research Center
LV	Launch Vehicle
MHz	Megahertz
MIL-STD	Military Standard
ms	millisecond
NASA	National Aeronautics and Space Administration
NPD	NASA Policy Directive
NPG	NASA Procedures and Guidelines
OML	Outer Mold Line
PA	Product Assurance
PAP	Product Assurance Plan
PCM	Pulse Code Modulation
PDS	Power Distribution System
psf	Pounds per Square Foot
psfa	Pounds per Square Foot, Absolute
psia	Pounds per Square Inch, Absolute
PWBS	Project Work Breakdown Structure
QA	Quality Assurance
R&D	Research and Development
RF	Radio Frequency
RFP	Request For Proposal
RMS	Root Mean Square
rms	Root Mean Square
RTB	Return to Base
RTO	Responsible Test Organization
RTOS	Real-time Operating System

SAS	Start Assist Subsystem
SDP	Software Development Plan
SOW	Statement of Work
SSR	Software Status Review
STIN	Space Transportation Information Network
SW	Software
SWRR	Software Readiness Review
TBD	To Be Determined
TM	Telemetry
TPS	Thermal Protection System
USAF	United States Air Force
VMS	Vehicle Management System
VSD	Vehicle System Demonstrator
WBS	Work Breakdown Structure

16 DEFINITIONS

The following terms are used in this Statement of Work in accordance with the definitions shown:

Booster: The expendable rocket used to deliver Demonstrator Vehicle to the separation condition.

Design margin: A numerical measurement of the actual versus required performance criteria applicable to the component or system with proper safety factor applied as defined by the appropriate standards, guidelines, and practices. A positive (numerically greater than zero) design margin confirms requirements are met including factors of safety.

Fail Safe: Designs that will prevent hazards to human life following failure of a component or system to function properly.

Launch Vehicle: The assembled Demonstrator Vehicle, Adapter, and Booster.

Limit Load: The maximum expected operational load at three-sigma Monte Carlo level.

Operational Concept Document: Provides operations and mission definition, including Launch Vehicle and Demonstrator Vehicle flight trajectory definition.

Verification: The Contractor ensures system/subsystem complies with requirements as documented.

Validation: The Government ensures that the fully integrated system meets all performance and mission specifications.